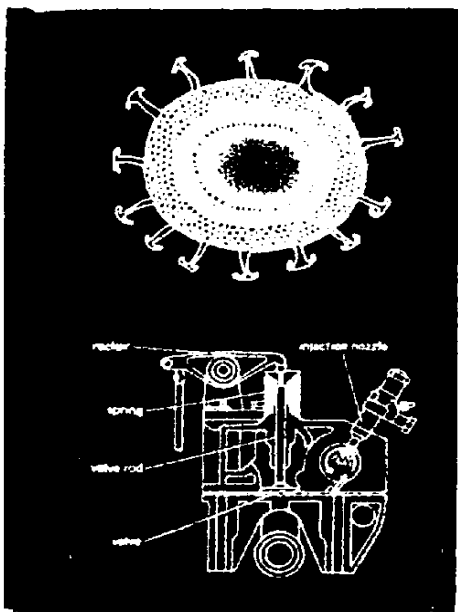


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Dictionary of Scientific and Technical Terms



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homogeneous radiation homotopy groups

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whose terms have the same total degree; equivalently it is a homogenous function of the variables involved.

homogeneous radiation [PHYS] Radiation having an extremely narrow band of frequencies, or a beam of monoenergetic particles of a single type, so that all components of the radiation are alike.

homogeneous reactor [NUCLEO] A nuclear reactor in which fissionable material and moderator (if used) are intimately mixed to form an effectively homogeneous medium for neutrons.

homogeneous space [MATH] A topological space having a group of transformations acting upon it, that is, a transformation group, where for any two points x and y some transformation from the group will send x to y .

homogenize [MET] To hold metal at a high temperature long enough to eliminate by diffusion any chemical segregation of the components.

homogenizer [MECH ENG] A machine that blends or emulsifies a substance by forcing it through fine openings against a hard surface.

homogentisase [BIOCHEM] The enzyme that catalyzes the conversion of homogentisic acid to fumaryl acetoacetic acid.

homogentisic acid [BIOCHEM] $C_8H_8O_4$. An intermediate product in the metabolism of phenylalanine and tyrosine; found in excess in persons with phenylketonuria and alkaptonuria.

homogony [BOT] Condition of having one type of flower, with stamens and pistil of uniform length.

homograft [BIOL] Graft from a donor transplanted to a genetically dissimilar recipient of the same species.

homograft rejection [IMMUNOL] An immunologic process by which an individual destroys and casts off a tissue transplanted from a donor of the same species.

homolochlamydeous [BOT] Having perianth leaves alike, not differentiated into sepals and petals.

homologenic [EMBRYO] Of a determined part of an embryo, capable of inducing formation of a similar part when grafted into an undetermined field.

Homoistela [PALEON] A class of extinct echinoderms in the subphylum Homalozoa.

homolecithal [CYTOL] Referring to eggs having small amounts of evenly distributed yolk. Also known as isolecithal.

homological algebra [MATH] The study of the structure of modules, particularly by means of exact sequences; it has application to the study of a topological space via its homology groups.

homologous [BIOL] Pertaining to a structural relation between parts of different organisms due to evolutionary development from the same or a corresponding part, such as the wing of a bird and the pectoral fin of a fish.

homologous serum jaundice [MED] A type of hepatitis caused by a filtrable virus that exists in the blood plasma and may be passed to another person through blood transfusion.

homologous stimulus [PHYSIO] A form of energy to which a specific sensory receptor is most sensitive.

homologous transformation [ASTRON] A mathematical transformation in the study of stellar models.

homologous tumor [MED] A neoplasm composed of tissue identical with those of the organ at the site of the tumor.

homology [ORG CHEM] That state, in a series of organic compounds that differ from each other by a CH_2 such as the methane series C_nH_{2n+2} , in which there is a similarity between the compounds in the series and a graded change of their properties.

homology group [MATH] Associated to a topological space X , one of a sequence of Abelian groups $H_n(X)$ that reflect how n -dimensional simplicial complexes can be used to fill up X and also help determine the presence of n -dimensional holes appearing in X . Also known as Betti group.

homology theory [MATH] Theory attempting to compare topological spaces and investigate their structures by determining the algebraic nature and interrelationships appearing in the various homology groups.

homolysis [CHEM] Symmetrical breaking of a covalent electron bond; for example, $A:B \rightarrow A\cdot + B\cdot$.

homometric pair [CRYSTAL] A pair of crystal structures whose x-ray diffraction patterns are identical.

homomorphism [BOT] Having perfect flowers consisting of only one type. [MATH] A function between two algebraic systems of the same type which preserves the algebraic operations.

homomorphs [CHEM] Chemical molecules that are similar in size and shape, but not necessarily having any other characteristics in common.

Homoneura [INV ZOO] A suborder of the Lepidoptera with mandibulate mouthparts, and fore-and hindwings that are similar in shape and venation.

homonomous hemianopsia [MED] Partial blindness affecting the inner half of one field of vision or the outer half of the other; caused by optic nerve lesions posterior to the chiasma.

homopause [GEOPHYS] The level of transition between the homosphere and the heterosphere; it lies about 80 to 90 kilometers above the earth.

homopetalous [BOT] Having all petals identical.

homoplasy [BIOL] Correspondence between organs or structures in different organisms acquired as a result of evolutionary convergence or of parallel evolution.

homopolar [ELEC] 1. Electrically symmetrical. 2. Having equal distribution of charge.

homopolar bond [PHYS CHEM] A covalent bond whose total dipole moment is zero.

homopolar generator [ELECTR] A direct-current generator in which the poles presented to the armature are all of the same polarity, so that the voltage generated in active conductors has the same polarity at all times; a pure direct current is thus produced, without commutation. Also known as acyclic machine; homopolar machine; unipolar machine.

homopolar machine See homopolar generator.

homopolymer [ORG CHEM] A polymer formed from a single monomer; an example is polyethylene, formed by polymerization of ethylene.

Homoptera [INV ZOO] An order of the class Insecta including a large number of sucking insects of diverse forms.

Homo sapiens [VERT ZOO] Modern human species; a large, erect, omnivorous terrestrial biped of the primate family Hominidae.

homoscedastic [STAT] 1. Pertaining to two or more distributions whose variances are equal. 2. Pertaining to a variate in a bivariate distribution whose variance is the same for all values of the other variate.

Homosclerophorida [INV ZOO] An order of primitive sponges of the class Demospongiae with a skeleton consisting of equirayed, tetraxonid, siliceous spicules.

homoserine [BIOCHEM] $C_4H_9O_3N$. An amino acid formed as an intermediate product in animals in the metabolic breakdown of cystathionine to cysteine.

homosexual [BIOL] Of, pertaining to, or being the same sex. [PSYCH] 1. Of, pertaining to, or exhibiting homosexuality. 2. One who practices homosexuality.

homosexuality [PSYCH] 1. State of being sexually attracted to members of the same sex. 2. A form of homoeroticism involving sexual interest without genital expression.

homosexual panic [PSYCH] An acute syndrome that comes as a climax of prolonged tension from unconscious homosexual conflicts or sometimes bisexual tendencies.

homosphere [METEOROL] The lower portion of a two-part division of the atmosphere (the upper portion is the heterosphere) according to the general homogeneity of atmospheric composition; the region in which there is no gross change in atmospheric composition, that is, all of the atmosphere from the earth's surface to about 80-100 kilometers.

homospory [BOT] Production of only one kind of asexual spore.

homothallic [MYCOL] Having genetically compatible hyphae and therefore forming zygospores from two branches of the same mycelium.

homotopy [MATH] Between two mappings of the same topological spaces, a continuous function representing how, in a step-by-step fashion, the image of one mapping can be continuously deformed onto the image of the other.

homotopy groups [MATH] Associated to a topological space X , the groups appearing for each positive integer n , which

homogeneous radiation

homotopy groups

whose terms have the same total degree; equivalently it is a homogenous function of the variables involved.

homogeneous radiation [PHYS] Radiation having an extremely narrow band of frequencies, or a beam of monoenergetic particles of a single type, so that all components of the radiation are alike.

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homolysis [CHEM] Symmetrical breaking of a covalent electron bond; for example, $A:B \rightarrow A\cdot + B\cdot$.

homometric pair [PHYS] Whose x-ray diffraction patterns are identical.

homomorphism [MATH] A mapping from one set to another such that only one type of operation in the first set corresponds to a unique operation in the second set.

homomorphs [CHEM] Crystals of the same size and shape, but with different internal structures.

Homoneura [INV ZOO] A genus of flies with a mandibulate mouth.

homonomous hemia [MATH] A hemia in which the inner half of the circle is similar in shape to the outer half.

homopause [GEOPHYS] The upper limit of the homosphere, about 100 kilometers above the Earth's surface.

homopetalous [BOT] Having petals of the same shape and size.

homoplasy [BIOL] A similarity in different organisms that is not due to common ancestry.

homopolar [ELECTR] Having equal distribution of positive and negative charges.

homopolar bond [CHEM] A bond in which the dipole moment is zero.

homopolar generation [PHYS] A type of polarization in which the poles have the same polarity.

homopolar machine [ELECTR] A type of machine in which the poles have the same polarity.

homopolymer [CHEM] A polymer made from a single monomer.

homopolymerization [CHEM] The process of forming a polymer from a single monomer.

Homoptera [INV ZOO] An order of insects, including the true bugs.

Homo sapiens [BIOL] The modern human species.

Homoscedastic [STAT] A type of statistical distribution in which the variance is constant.

Homosclerophoric [BIOL] A type of sclerophyllous plant with thick, waxy leaves.

homoserine [BIOCHEM] An amino acid that is a precursor of methionine.

homosexual [BIOL] A type of sexual orientation in which individuals are attracted to members of the same sex.

homosexuality [PSYCH] A type of sexual orientation in which individuals are attracted to members of the same sex.

homosexual panic [PSYCH] A type of panic disorder in which individuals experience anxiety and fear related to their sexual orientation.

homosphere [METEOROL] The part of the atmosphere in which the composition is constant.

homospory [BOT] A type of spore that is capable of both sexual and asexual reproduction.

homothallic [MYCO] A type of fungus that has both male and female reproductive organs on the same individual.

homotopy [MATH] A continuous deformation between two topological spaces.

homotopy groups [MATH] A sequence of Abelian groups that describe the topological structure of a space.

homotopy theory [MATH] A branch of algebraic topology that studies the properties of spaces that are invariant under homotopy.

homolysis [CHEM] The process of breaking a covalent bond to form two radicals.

homomorphism [MATH] A mapping between two sets that preserves the structure of the sets.

homomorphs [CHEM] Crystals of the same size and shape, but with different internal structures.

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